

The Problems of Repetition  
and Drop-out  
in Basic Education  
in Madagascar

by

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Summary results of a study  
undertaken in co-operation  
with UNICEF and the Ministry of Secondary  
and Basic Education

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The views and opinions expressed in this paper are those of the authors  
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## A. Background and Objectives

- 1 The efforts of the DRM in the field of secondary and basic education have been remarkable. They have led to a generalization and democratization of educational opportunities. But they also stretched the financial capacities of the government to the limit.
- 2 At present, basic education in DRM is experiencing a severe crisis of quality. Human and material resources for education are in short supply. There are tendencies for enrolments to decline, thus offsetting the gains of earlier years. In this situation, it is imperative that every source of inefficiency and wastage in the school system be identified and blocked.
- 3 Excessive repetition and drop-out in the basic schools of DRM are a major source of such wastage. For the children involved, moreover, they signify failure, frustration and severely diminished chances of realizing their potential. All educational officials are aware of the seriousness of the problem. Pilot studies carried out in 1986 in the two districts<sup>1/</sup> of Moramanga and Fenerive-Est have provided further alarming evidence.
- 4 But if effective remedial action is to be taken, MINESEB, UNICEF and other agencies willing to help need to know more: they need precise data about the magnitude of repetition and drop-out, they need to know the provinces<sup>2/</sup> and districts where the problem is most serious, they need to ascertain the opinions of those in the field -headmasters, teachers, parents, and representatives of decentralized collectivities; and they need to know which weapons will promise success in fighting the problem.
- 5 This is why the present study was launched. MINESEB, UNICEF and in an advisory capacity, Unesco, co-operated in its execution. The objectives they pursued were threefold.
  - To provide decision-makers with precise data about the magnitude and geographical variations of the problem
  - To pinpoint those factors which cause educational wastage both in the school itself and in its socio-economic environment
  - To provide the specialists concerned in MINESEB with an opportunity of practising their analytical and planning skills by examining a key educational problem

## B. Methodology, Sample, and Questionnaire

- 6 One need not be a specialist to observe that the large proportions of students repeating or dropping-out at different grades of the 5-year cycle of the primary school<sup>3/</sup> are a source

<sup>1/</sup> Referred to as CIRESEB in the text

<sup>2/</sup> Referred to as FARITANY in the text

<sup>3/</sup> Ecole d'éducation de base, or EEB

of educational wastage. They require their place in school, their textbooks and their share of teachers' time as everyone else, but they will either never become graduates; or only with considerable delay.

7. The analytical concept that captures this problem are the student flow rates. For every grade, one can calculate a repetition rate, a drop-out rate and a promotion rate. These three always add up to 100%. One can determine these rates for boy and girl students separately.
8. Based on these flow rates, it is possible to determine a Global Wastage Ratio (GWR), which indicates the degree of wastage in the 5-year school cycle as a whole. Its calculation requires the relatively sophisticated 'cohort analysis', but its logic is simple. It rests on a comparison between the actually observed ratio of CEPE graduates to students still in school, and the ratio one would obtain in an ideal world where there are neither repeaters nor drop-outs. This study has determined the GWR for every complete school in the sample. In the best of circumstances, the GWR is equal to one. But where repetition and drop-out rates are high, it will increase. Its theoretical maximum is infinity.
9. In addition, this study uses a second indicator to denote the degree of wastage throughout the 5 years of an E.E.B. It is called the total rate of retention (TRR). Unlike the GWR, it can be calculated even where only the transition rate from one grade to another is given, without knowing the details of repetition and drop-out. Again, this study has calculated the TRR for every complete school in the sample, separately for boy and girls students. Ideally, TRR can be as high as 100%, but will be much lower in most schools, due to the many students who were not retained in their difficult route from grade 1 to grade 5 .
10. This study has covered 114,417 students in 442 E.E.B throughout the country - slightly more than 8% of the total enrolment at this level in 1984/85. Only public schools were investigated
11. The 442 E.E.B which make up the sample were identified in a 3-stage process which combined systematic selection with random elements as follows
12. The sample should cover all 6 Faritany to the same extent  
See Table 1

Table 1: Distribution of Sample Schools by Faritany

Faritany	Value	Frequency	Percent	Valid Percent	Cumul. Percent
Tananarive	1	62	14.0	14.0	14.0
Diego Suarez	2	69	15.6	15.6	29.6
Fianarantsoa	3	76	17.2	17.2	46.8
Majunga	4	72	16.3	16.3	63.1
Tamatave	5	87	19.7	19.7	82.8
Tulear	6	76	17.2	17.2	100.0
	TOTAL	442	100.0	100.0	

13. In each Faritany, 3 CIRESEB were selected at random, from which sample schools were to be drawn. In the Faritany of Tamatave, a fourth CIRESEB (Fenerive-Est) was added, in view of an ongoing study on nutrition education. See Table 2.

Table 2: Distribution of Sample Schools by CIRESEB

CIRESEB	Value	Frequency	Percent	Valid Percent	Cumul. Percent
Anjozorobe	1	23	5.2	5.2	5.2
Tananarive II	2	12	2.7	2.7	7.9
Tananarive I	3	27	6.1	6.1	14.0
Ambilobe	4	28	6.3	6.3	20.4
Antsiranana I	5	17	3.8	3.8	24.2
Antsiranana II	6	24	5.4	5.4	29.6
Fianarantsoa I	7	26	5.9	5.9	35.5
Ambalavo	8	24	5.4	5.4	41.0
Fandriana	9	26	5.9	5.9	46.8
Marovoay	10	24	5.4	5.4	52.3
Mahajanga I	11	24	5.4	5.4	57.7
Mahajanga II	12	24	5.4	5.4	63.1
Brackaville	13	31	7.0	7.0	70.1
Fenerive-Est	14	19	4.3	4.3	74.4
Toamasina I	15	20	4.5	4.5	79.0
Toamasina II	16	17	3.8	3.8	82.8
Sakaraha	17	26	5.9	5.9	88.7
Toliara I	18	24	5.4	5.4	94.1
Toliara II	19	26	5.9	5.9	100.0
	TOTAL	442	100.0	100.0	

14. In each CIRESEB, about 1 in every 8 schools were drawn from the card-index of the schools in this circumscription.

However, an effort was made to have urban schools, rural schools with easy access, and rural schools with difficult access represented in even measure. Accordingly, the sample schools are distributed along the rural-urban axis as in Table 3.

Table 3: Distribution of Sample Schools by their Accessibility

	Value	Frequency	Percent	Valid Percent	Cumul. Percent
City School	1	149	33.7	34.8	34.8
Easy Access/Rural	2	148	33.5	34.6	69.4
Diff. Access/ Rural	3	131	29.6	30.6	100.0
	.	14	3.2	MISSING	
	TOTAL	442	100.0	100.0	

15. The questionnaire used to interview the schools was of the structured type. It was pre-tested in 2 pilot studies during 1986.
16. There are 5 main sections in the questionnaire:
  - (i) Data needed to identify the school
  - (ii) Data to measure the magnitude of educational wastage
  - (iii) The internal school conditions which may affect educational wastage
  - (iv) Factors in the socio-economic environment which may affect educational wastage
  - (v) The opinions of school director, teachers, parents, and members of the community.
17. The chief respondent was the school director. For section 5, teachers, parents, and representatives of decentralized collectivities (VIP) were added.

#### C. Educational Wastage : its Magnitude and Distribution

18. Repetition, drop-out, and promotion rates at each of the 5 grades of basic education in DRM are given in Table 4. We see that T<sub>1</sub> and T<sub>5</sub> are the two most critical grades. In T<sub>5</sub> where the promotion rate equals the proportion of those who sat for the CEPE and passed it, only 37% of students succeed, 36% choose to repeat, and 27% leave school without a certificate.
19. Repetition rates are throughout the cycle higher than those of drop-out. In T<sub>1</sub> and T<sub>5</sub>, particularly, repetition acts as a veritable goulot d'étranglement which chokes the flow of students and inflates class-size to a point where ordinary pedagogical methods will all fail.

Table 4: Repetition, Drop-out and Promotion Rates

Promotion Rate	0.53	0.71	0.57	0.62	0.37
Repetition Rate	0.36	0.25	0.30	0.28	0.36
Drop-out Rate	0.11	0.04	0.13	0.10	0.27

20. The global wastage ratio (GWR) varies widely from school to school, between one CIRESEB and another, and between different Faritany. For the sample as a whole, its median value is 4.7 - an extremely preoccupying figure. The degree of efficiency realized in the primary schools in DRM is 4.7 times lower than it could be. It is proposed that Tables 5 and 6, as well as maps 1 and 2, be examined with particular care.

Table 5: Global Wastage Ratio in Different Faritany

Faritany	GWR (Median)
Tananarive	3.3
Diego Suarez	6.4
Fianarantsoa	3.5
Majunga	5.4
Tamatave	7.2
Tulear	4.5
TOTAL	4.7

Table 6: Global Wastage Ratio in Different CIRESEB

CIRESEB	GWR (Median)
Anjozorobe	5.2
Tananarive II	1.8
Tananarive I	3.8
Ambilobe	10.9
Antsirana I	4.6
Antsirana II	9.0
Ambalavao	3.3
Fandriana	4.9
Fianarantsoa I	2.6
Marovoay	7.9
Mahajanga I	4.9
Mahajanga II	23.1
Brickaville	7.9
Tenerive-Est	25.6
Toamasina I	3.9
Toamasina II	8.4
Sakaraha	3.3
Toliara I	4.2
Toliara II	8.5

Map 1: Levels of Educational Wastage  
in Different Faritany

 GWR < 3.0

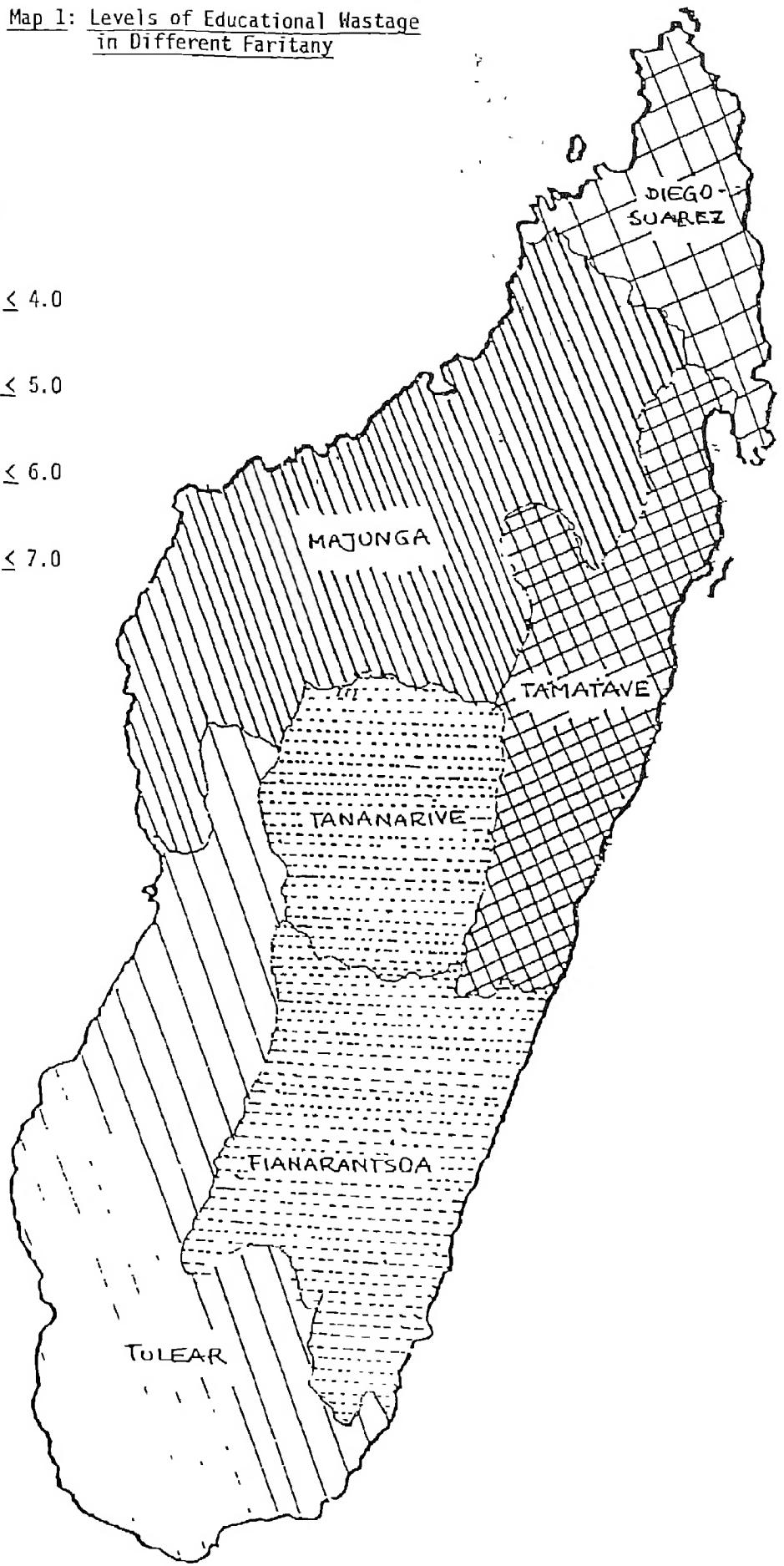
  $3.1 \leq \text{GWR} \leq 4.0$

  $4.1 \leq \text{GWR} \leq 5.0$

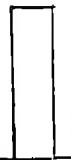
  $5.1 \leq \text{GWR} \leq 6.0$

  $6.1 \leq \text{GWR} \leq 7.0$

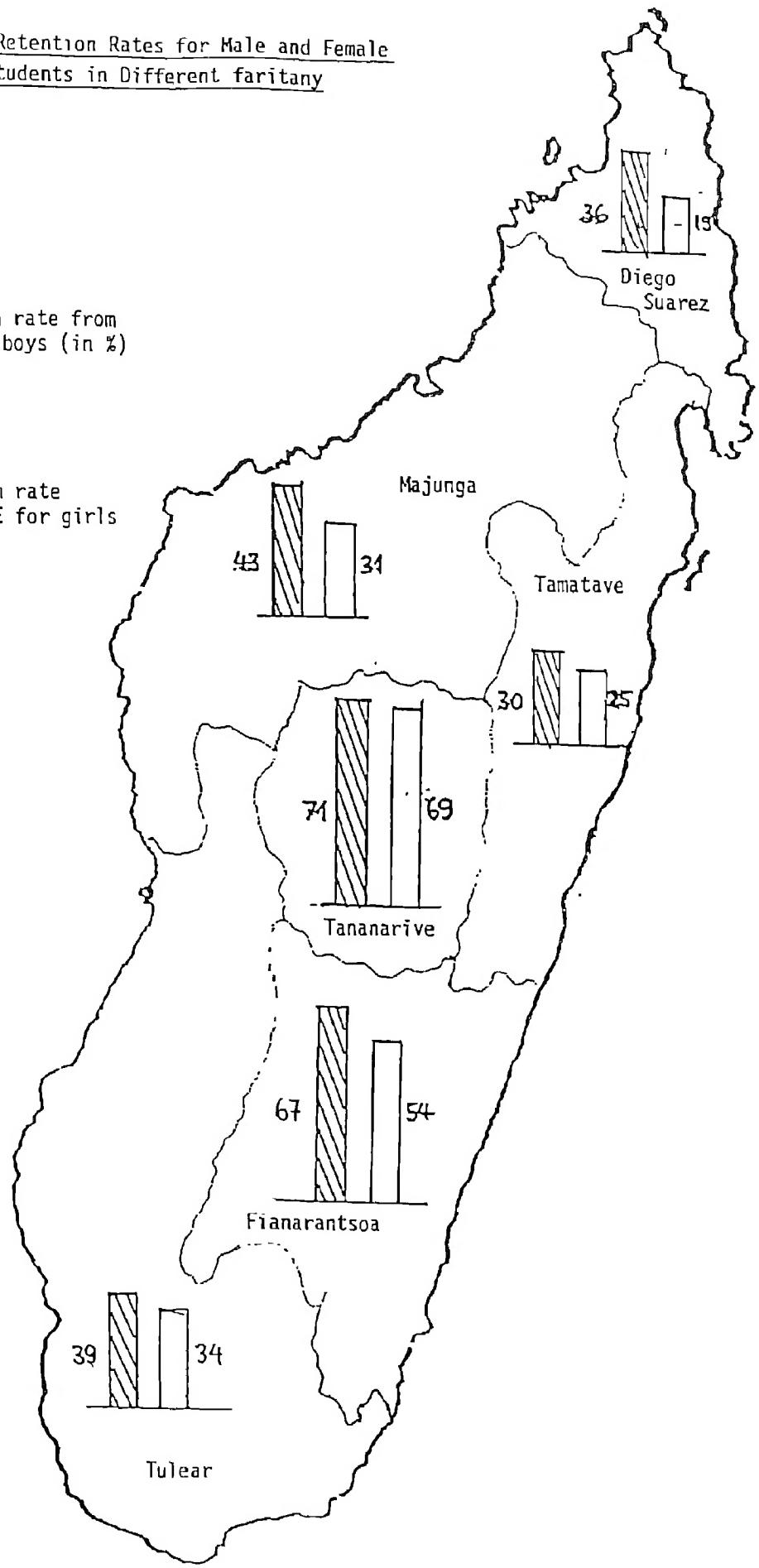
 GWR  $\geq 7.1$



Map 2: Retention Rates for Male and Female Students in Different faritany

 Total retention rate from T1 to CEPF for boys (in %)

 Total retention rate from T1 to CEPE for girls (in %)



21. The 'best' Faritany is, not surprisingly, Tananarive. The contrast with the 'worst' Faritany, that of Tamatave, is striking. Educational wastage there is more than twice that of the capital province. Another critical area is Diego Suarez with a median GWR of 6.4.
22. Between the 19 CIRESEB analysed, the disparities are even more spectacular. Fenerive-Est and Mahajanga II stand out as two circumscriptions in which educational wastage has reached crisis proportions.
23. How does the problem of educational wastage affect boys and girls, respectively? See Table 7.

Table 7: Repetition, Drop-out, and Promotion Rates  
of Boys and Girls in Basic Education

	<u>BOYS</u>				
Promotion Rate	0.50	0.71	0.54	0.59	0.38
Repetition Rate	0.37	0.27	0.31	0.28	0.35
Drop-out Rate	0.12	0.02	0.15	0.12	0.27
<u>GIRLS</u>					
Promotion Rate	0.56	0.71	0.60	0.64	0.36
Repetition Rate	0.35	0.23	0.30	0.28	0.37
Drop-out Rate	0.09	0.07	0.11	0.08	0.27

One is happy to note that the girls are not doing any worse than the boys. In fact, their promotion rates tend to be somewhat higher except for T5. Drop-out of girls, too, appears to be more limited.

24. The picture becomes clearer by looking at the total retention rate (TRR) which has been calculated separately by gender. See Table 8.

Table 8: Total Retention Rate for Boy and Girl Students  
in Different Faritany

Faritany \ TTR	TRR for Boys (Median)	TRR for Girls (Median)
Tananarive	69.4%	71.0%
Diego Suarez	19.9%	35.9%
Fianarantsoa	54.0%	62.7%
Majunga	30.8%	42.9%
Tamatave	24.7%	29.9%
Tulear	34.3%	39.1%
TOTAL	34.7%	48.9%

25. Whatever the Faritany, girl students in E.E.B. consistently achieve higher retention rates than boys. Despite poverty at home, ill-equipped schools, and poorly qualified teachers, they manage to survive the difficult years in school in greater numbers.
26. Finally, how does the problem of educational wastage vary along the rural-urban axis? Are town schools doing any better than rural schools, and is there a difference between rural schools easy to reach from the CIRESEB Headquarters and others where access is difficult? Table 9 provides the answers.

Table 9: Different Measures of Educational Wastage  
by Location and Accessibility of Schools

Type of Schools \ Wastage Measures	GWR (Median)	TRR Boys (Median)	TRR Girls (Median)
Town schools	3.5	63.2%	79.9%
Rural schools with easy access	7.5	22.7%	24.8%
Rural schools with Difficult access	7.4	16.0%	22.0%
ALL SCHOOLS	4.7	34.7%	48.9%

27. These figures require no commentary. Town schools are largely privileged. As for rural schools, those which are remote, difficult to supervise, and away from motorable roads tend to have lower rates of retention. It is noteworthy that girls seem to cope better.
28. The problems of educational wastage as highlighted by all these figures are no doubt alarming. When we interpret them, however, an additional factor needs to be borne in mind: only about 40% of schools which figure in this sample are "complete schools" in the sense that they offer the full 5 grades and have the requisite number of teachers and classrooms. Another 40% manage to offer 5 grades as well, but they do so with only 1 classroom in which one or two teachers practice multi-grade teaching in conditions of utter congestion.
29. It is only for these 80% of schools that measures of educational wastage (GWR, TRR) have been calculated. For the remaining 20%, which are unable to offer the full 5-grade curriculum and send their students to sit for the final certificate (CEPE), wastage is by definition all-pervasive.

The total picture is thus probably even less comforting than what is revealed by the analyses and computations of this study.

D. School Conditions which Account for Educational Wastage

30. Small versus large schools: The smallness of many schools in our sample is cause for concern. 11% of them have only a single classroom; another 62% have between 2 and 5 classrooms. Not surprisingly, almost 20% have less than 100 students.
31. It is frequently observed that small schools record higher rates of wastage, due to their isolation, poverty, and difficult environment. This study confirms this assumption. Both the variable 'number of classrooms' and the variable 'number of students' show significant inverse correlations with the global wastage ratio (GWR). Pearson's R is -.344 and -.286, respectively.
32. Those findings stress the need for effective school mapping. Many countries have found it possible to re-design their primary school network in such a way, that the smallest, least viable schools are closed down in favour of larger, more economical, and more accessible institutions.
33. Recent schools versus older schools: One may ask whether older or more recent schools are better able to cope with the problems of educational wastage. In DRM, no less than 44% of all public E.E.B. were opened during the decade 1970-1980, and another 7% after 1980. the momentum of educational expansion in these years was staggering, some would even say it was excessive.
34. In fact, there is a relatively weak, but unmistakeable correlation between the variable 'Opening Year of School' and the extent of educational wastage. In the case of the total retention rate (TRR), this correlation is statistically significant.
35. From these results, it is possible to argue that remedial measures should first concentrate on E.E.B. that were recently established. They may have neither the pedagogical experience, nor the material conditions to fight repetition and drop-out with the same success as older, well-established institutions.
36. The student/teacher ratio: The student/teacher ratio which so many experts consider to be the key determinant of educational quality, has apparently no influence on the degree of educational wastage in our sample schools. All correlations run on computer turned out to be insignificant.
37. Still, it is interesting to look at the facts. Table 10 suggests that teacher supply in Madagascar's E.E.B. may be less of a problem than is at times claimed. More than half of the sample schools have student/teacher-ratios below 35

Table 10: Student/Teacher Ratios

Student/ Teacher	Value	Frequency	Percent	Valid Percent	Cumul. Percent
5-20	1	73	16.5	17.3	17.3
21-35	2	148	33.5	35.0	52.2
36-50	3	125	28.3	29.6	81.8
51-65	4	49	11.1	11.6	93.4
66-80	5	23	5.2	5.4	98.8
81-95	6	4	.9	.9	99.8
96-110	7	1	.2	.2	100.0
.		19	4.3	MISSING	
TOTAL		442	100.0	100.0	

38. Teachers' formal qualifications: Table II gives information on the qualification structure of the teaching force in the sample schools.

Table 11: Teachers by Formal Qualification

Teachers Qualifi- cations	Absolute Numbers	%
CAE/EB	1041	33.2
CAP/EB	1105	35.2
BEPC/CFEP/CE	558	17.8
BAC	214	6.8
Not known	220	7.0
TOTAL*	3138	100.0

\* 17 schools out of 442 did not furnish information

39. It is difficult (though not impossible) to combine the various different qualifications into a single 'qualification index' for each school and to see if this index does or does not have a significant influence on educational wastage. As a step in this direction, we correlated the number of teachers with the highest qualifications, i.e. B.A.C., with both GWR and TRR. Pearson's R was highly significant in either case.

40. Does this kind of partial finding prove that MINESEB, UNICEF, and others should put their resources into formal teacher training in order to fight educational wastage? We do not think so. Many other factors, human and material, are at play, and formal certificates may be less important in making an effective teacher than experience, familiarity with the community, personal commitment, and other personal characteristics.
41. Teachers' experience: Most teachers in our sample have between 6 to 10 years of teaching experience. Inexperienced, young teachers with 5 or less years of service are about equal in number to older teachers with more than 10 years teaching experience. See Table 12.

Table 12: Teachers' Overall Length of Service

Years of Service	Value	Frequency	Percent	Valid Percent	Cumul. Percent
1-5	1	86	19.5	20.6	20.6
6-10	2	243	55.0	58.1	78.7
11-15	3	69	15.6	16.5	95.2
16-20	4	13	2.9	3.1	98.3
21 and more	5	7	1.6	1.7	100.0
		24	5.4	MISSING	
TOTAL		442	100.0	100.0	

42. As our correlation analysis has shown teachers' experience has a perceptible, but statistically not quite significant influence in reducing educational wastage.
43. Teachers' stability: More than the overall length of service, it is the number of years spent in the same school which apparently makes teachers more effective in fighting repetition and drop-out. A statistically significant correlation is observed both with GWR (Pearson's R= -.116) and with TRR (Pearson's R= +.1329). The longer the period which a teacher has spent in the same school, the better will he know the students and their community, and the greater will be his commitment to their welfare and scholastic success.

Table 13 provides the descriptive data on teachers' stability.

Table 13: Teachers' Length of Service in Present School

Years served in Present School	Value	Frequency	Percent	Valid Percent	Cumul. Percent
1-5	1	337	76.2	81.4	81.4
6-10	2	66	14.9	15.9	97.3
11-15	3	7	1.6	1.7	99.0
16-20	4	4	.9	1.0	100.0
.	28		6.3	MISSING	
TOTAL	442		100.0	100.0	

44. The role of the F4: The F4, thoroughly implanted throughout Madagascar, have been assigned a key role in permanent in-service training of primary teachers. In fact, as we can see from Table 14, most teachers spend considerable time at the F4. In 75% of the schools in our sample, every teacher is away on F4-training for an average of 6-10 days per school year.

Table 14: Time Spent on In-Service Training at the F4

Average No. of Days per teacher Spent in F4 during Current School Year	Value	Frequency	Percent	Valid Percent	Cumul. Percent
0	1	8	1.8	2.0	2.0
1-5	2	66	14.9	16.7	18.7
6-10	3	294	66.5	74.4	93.2
11-15	4	14	3.2	3.5	96.7
16-20	5	9	2.0	2.3	99.0
21 and more	6	4	.9	1.0	100.0
	47		10.6	MISSING	
TOTAL	442		100.0	100.0	

45. All this involves a considerable investment of time. But how productive and useful is this investment? Unfortunately, the correlations between 'Average number of days per teacher spent on F4-training during current school year' and GWR or TRR are not at all significant. The F4s obviously do not play their proper role. The way they function at present, they seem to result in a loss of precious teachers' time rather than a gain in teachers' effectiveness.
46. Teachers' attention to students at risk: Our study shows that very few schools have any special pedagogical activities in support of students who had to repeat. Of the less than 10% who do, almost all focus their attention on T5-students. The difficult first grade where repetition rates are equally high is completely neglected.

47. This relative absence of special support measures for students at risk probably explains another noteworthy finding: Schools which tolerate a higher number of successive repetitions end up having higher wastage rates and lower rates of retention. The respective correlation coefficients are all statistically significant.
48. This need not be so. Basically having students repeat a grade is to let them catch up and avoid their dropping out. But repetition can be a positive, meaningful measure only if the students in question are given special pedagogical support. This support, it would appear, is wanting at present.
49. Textbooks, didactic materials, school furniture: The study has made a very detailed inventory of the number and condition of different kinds of textbooks, of didactic materials such as maps, rulers, compasses, etc. and of school furniture such as tables, benches and blackboards. To analyse the findings would require a report of its own.
50. In general terms, the situation is one of great scarcity in most schools, and of relative abundance in a few privileged institutions. On the average, the sample schools have .156 items of didactic materials per student, or one item for every six students. For school furniture, the average availability is .308 per student, i.e. about one table, bench or blackboard for every three students.
51. A somewhat more detailed analysis is needed regarding the availability of textbooks, and their possible importance in maintaining instructional quality. Table 15 shows, again, a situation of considerable shortages. Most of the schools which provided information on this point have less than 1 textbook for every three students. The reasonable enough standard of 1 to 2 textbooks per student is met by only 5% of the schools.

Table 15: Availability of Textbooks per Student

Textbooks per Student	No. of Schools
Less than 1 for 3 students (0.0 - 0.32)	149
At least 1 for 3 students (0.33 - 0.49)	50
At least 1 for 2 students (0.50 - 0.99)	61
At least 1 for each student (1.00 - 1.99)	15
At least 2 for each student (2.00 & more)	4
<b>TOTAL*</b>	<b>279</b>

\* Only 279 out of 442 schools provided the necessary information.

Where there is so little to go by, it is not surprising that

the variable 'textbooks per student' does not have any perceptible influence on educational wastage. The statistical correlations with GWR and TRR are not significant.

52. School gardens and school canteens. In the context of current efforts to develop nutrition education and agricultural practice as part of the primary school curriculum, it is interesting to check how many EEB have school gardens and school canteens, and how they are used.
53. Fifty-five percent of the sample schools apparently have a school garden, and a little less than 45% declare that they plant and exploit their gardens quite actively. This seems to be a good starting point for programmes of nutrition education. Moreover, we note a significant negative correlation between the presence of school gardens and the level of educational wastage (GWR).
54. Very few schools, on the other hand, have a school canteen - only 25 out of 442. Some of these canteens are quite large, serving meals to 200 students or more. As far as their possible effect on educational wastage is concerned, no significant relationship can be discovered.
55. School buildings and facilities: The study looked into the main existing types of school construction, verified the condition of school buildings, and checked on the availability of such amenities as drinking water, toilets and electricity. It is here that we find, statistically-speaking, some of the most striking determinants of educational wastage, and some of the most obvious opportunities for remedial action.
56. For those in charge of school construction and repairs, Tables 16 and 17 will be of some interest.

Table 16: Types of School Construction

Type of School Construction	Value	Frequency	Percent	Valid Percent	Cumul. Percent
Bricks	1	255	57.7	59.9	59.9
Wood	2	78	17.6	18.3	78.2
Brick & Wood	3	33	7.5	7.7	85.9
Mud	4	48	10.9	11.3	97.2
Other	5	12	2.7	2.8	100.0
	.	16	3.6	MISSING	
TOTAL		442	100.0	100.0	

Table 17: Conditions of School Buildings

Condition of Buildings	Value	Frequency	Percent	Valid Percent	Cumul. Percent
Good	1	115	26.0	27.1	27.1
Average	2	218	49.3	51.4	78.5
Bad	3	91	20.6	21.5	100.0
	.	18	4.1	MISSING	
	TOTAL	442	100.0	100.0	

However, more important for the problem at hand is the fact that the condition of school buildings correlates significantly with the level of educational wastage as measured through either GWR or TRR.

57. Only 1 in every 5 schools of our sample has electricity. This factor, too, is significantly correlated with the level of educational wastage (Pearson's  $R=+.462$ ). This is not to suggest, of course, that electrification and upgrading of school buildings alone would be the right kind of policy to reduce repetition and dropout. If such measures are to yield results, it will only be in the framework of more comprehensive school rehabilitation programmes which pay equal attention to pedagogical and material factors.
58. Provisions for students' health and hygiene: Drinking water and proper toilets, are still hard to come by in the basic schools of our sample. Table 18 gives the necessary details.

Table 18: Availability of Drinking Water and Toilets

	Schools which have			
	Drinking Water		Toilets	
	Absolute No.	%	Absolute No.	%
Yes	137	31.0%	227	51.4%
No	289	65.4%	198	44.8%
Not known	16	3.6%	17	3.8%
TOTAL	442	100.%	442	100%

59. What matters in the context of this study, is that there are strong and significant correlations between availability of drinking water and toilets in a school, and its success in fighting wastage. Pearson's R is +.385 and +.338, respectively. For UNICEF and its policy of integrated basic services this may be a particularly interesting finding.
60. The importance of pre-schooling: Whether or not a child has had a chance to attend pre-school may, in large measure, determine his or her future school career. Unfortunately, in Madagascar as in other Third World countries, pre-schools are still few and far between, especially in the remote rural areas.
61. It is therefore rather good news that in our sample, 30% of the schools indicated that at least some of their students had previously been attending pre-school. For one in every ten schools, the percentage of former pre-schoolers is, in fact, quite considerable, i.e. from 60 to 100%.

Table 19: Schools by % of Students who have Attended Pre-School

Percent of Students who have attended pre-school	Value	Frequency	Percent	Valid Percent	Cumul. Percent
0.0%	1	263	59.5	70.1	70.1
1-20	2	57	12.9	15.2	85.3
21-40	3	10	2.3	2.7	88.0
41-60	4	8	1.8	2.1	90.1
61-80	5	15	3.4	4.0	94.1
81-100	6	22	5.0	5.9	100.0
	.	67	15.2	MISSING	
TOTAL		442	100.0	100.0	

62. Does pre-schooling have positive effects in fighting educational wastage? Does it give children a better chance to avoid the fatal cycle of grade repetition and early drop-out? This study suggests an emphatic yes to this question. The variable '% of students who have attended pre-school' correlates significantly with both GWR and TRR. Pearson's R is -.423 and +.330, respectively.
63. It would seem important to know in which Faritany these links between pre-schooling and basic education are strongest. Table 20 gives us some indication. With the exception of Diego Suarez, all Faritany have roughly the same number of E.E.B. which benefit from the presence of pre-school. Tananarive does by no means occupy a special place.

Table 20: Pre-School Opportunities in Different Faritany

Faritany	No. of schools where			
	Not a single student has been to pre-school	1 to 20% of students have been to pre-school	21 to 60% of students have been to pre-school	61 to 100% of students have been to pre-school
Tananarive	37	10	3	9
Diego Suarez	58	3	2	5
Fianarantsoa	50	16	3	5
Majunga	52	7	3	7
Tamatave	53	10	5	5
Tulear	13	11	2	6

Note: The total adds up to 375 schools. Another 67 schools did not provide any information on this point.

64. The greatest gaps in pre-school opportunities are, however, between rural and urban schools. Table 21 is very clear in this respect.

Table 21: Pre-school Opportunities in rural and Urban Areas

	No. of Schools where			
	Not a single student has been to pre-school	1 to 20% of students have been to pre-school	21 to 60% of students have been to pre-school	61 to 100% of students have been to pre-school
Town schools	44	47	17	33
Rural schools with easy access	117	7	1	3
Rural schools with difficult access	101	3	-	1

65. Hence, for the battle against educational wastage in primary schools to be effective, efforts should be made to expand preschool services in the rural areas. It is there that GWR and TRR tend to be most critical (see Table 9).

#### E. The School Environment

66. The causal links which may exist between the socio-economic, geographic, or occupational environment and the levels of repetition, drop-out, and retention in school are no doubt important, but perhaps not the main concern of this study. While these environmental factors may help us to better understand the problem, they do not usually allow us to do much about them. Hence, we limit ourselves to only a brief discussion.
67. It has already been pointed out that rural schools, especially those with difficult access, suffer much more from wasteful repetition and drop-out (see Table 9 and paras 26-27).
68. Settlement patterns: The kind of settlement - concentrated or dispersed - people live in, apparently makes a difference, judging by the significant correlations of this variable with GWR and TRR. However, it appears that even in dispersed communities, students' walking time to get to school is not really a problem. Most schools report that 60 to 80% of their students take less than 15 minutes to get to school. No significant correlations have been found between average walking time and GWR or TRR.
69. Mobility of the Populations: Only 8% of the schools report that in the surrounding communities mobility is high or very high. This factor seems to have as little influence on students' repetition and drop-out as the other variable we checked in this connection, namely the degree to which seasonal or permanent occupations predominate. More than 90% of the sample schools indicate that in their community migration linked with seasonal labour is of little importance.
70. Main occupations in the community: No attempt is made to show how occupational patterns in the community influence patterns of school repetition and drop-out. Table 22, therefore, presents only descriptive data.

Table 22: Main Occupations in the Communities

Dominant Occupation in the Community	Schools	No. of Schools
1. Public administration		57
2. Salaried employment		15
3. Commerce		32
4. Artisanry		41
5. Fishery		27
6. Agriculture		284
7. Livestock rearing		54
8. Other		5
TOTAL 1/		515

1/Exceeds 442 since some schools named more than one dominant occupations

F. The Opinions of Those on the Spot

71. A study of this kind must examine not only the objective conditions in and outside the schools, but should also ascertain the subjective opinions of school principals, teachers, parents, and community representatives. They know the problems of repetition and drop-out from close range, and often through years of experience. Their own behaviour can do more to remedy or aggravate the situation than the action of Ministries or outside agencies.
72. The main reasons for repetition (see Table 23): Teachers and school principals largely agree when it comes to pinpointing the reasons why so many students repeat. In their view, the main factor is student absenteeism which in turn is linked to students' ill health and mal-nutrition, and to lack of interest on the part of parents. Teachers and principals thus tend to blame the repetition problem mainly on external reasons outside their responsibility. The one important in-school factor they cite is shortage of textbooks. Our earlier analysis (paras 49 to 51) confirms this view.

Table 23: Main Reasons for Repetition as seen by the People on the Spot

Reasons	Opinions			Main reasons for repetition as seen by		
	School Principals	Teachers	Parents	V.I.P.		
Shortage of textbooks	2	2	1	1		
Students are too often absent	1	1	3	3		
Students are ill and mal-nourished	4	4	4	4		
Teachers are not qualified enough	9	5	5	5		
Teachers are qualified but not enough in number	5	9	6	6		
The curriculum is too demanding	6	7	9	9		
Parents don't take sufficient interest in children's progress in school	3	3	2	2		
Some students are dull and ill-adapted	7	6	8	8		
Other reasons	8	8	7	7		

Note: Most important reason = 1; second most important reason = 2; third most important reason = 3, etc.

Table 24: Main Reason for Drop-out as seen by the People on the Spot

Reasons	Opinions			Main reasons for drop-out as seen by		
	School Principals	Teachers	Parents	V.I.P.		
Children are engaged in family chores	1	1	2		2	
Parents change residence	4	4	6		6	
Students are too often absent	7	6	8		7	
Parents don't see the school as being very useful	5	5	3		3	
Some students think they are too old	6	7	7		8	
Parents can't pay any longer for the education of their children	2	2	1		1	
Marriage/maternity on the part of girls	10	10	10		10	
Illness or accidents	9	8	9		9	
Students are mal-nourished	3	3	4		4	
Other reasons	8	9	5		5	

Note: Most important reason = 1; second most important reason = 2; third most important reason = 3, etc.

73. It is interesting to note that neither teachers nor their principals seem to consider teachers' qualifications and teacher supply a real problem. Nor do they blame the curriculum for being overcharged and too demanding.
74. The views of parents and of the representatives of decentralized collectivities are much the same. To them, the key factor is shortage of textbooks. As the second most important reason they see their own inability to take interest in their children's progress in school. Is it because they have no time, or because their own illiteracy or lack of education condemns them to a passive role? That parents are openly critical of their own behaviour, is in any case an observation worth thinking about.
75. The main reason for drop-out (see Table 24): School principals and teachers see the problem of drop-out as being due mainly to the general poverty - child labour, parents' inability to pay for the education of their children, and children's mal-nutrition, in that order. Frequent change of residence on the part of parents is also mentioned as a problem of some importance. It may be recalled that our earlier analysis (see para 69 ) had found this factor to be not significant.
76. It is interesting to note, in passing, that neither students' illness, nor early marriage and maternity of primary school girls are seen as an important problem. Teachers, principals, and community members all agree on this point.
77. Parents and community leaders equally blame the drop-out problem on economic factors. Where they differ from the principals and teachers is that, to some extent, they have lost faith in the school's usefulness. This is by their own admission the third most important reason for student's drop-out.
78. Subjects which pose particular problems: The school principals were also asked to indicate which subjects posed most of a problem at the different grades, thus obliging students to repeat and eventually drop-out. Their opinions are summarized in Table 25.

Table 25: Curricular Subjects Posing Problems, by Grade

Subjects	Grades				
	T1	T2	T3	T4	T5
MALAGASY	1	3	4	5	3
FRANTSAY (French)	5	1	1	1	1
KAJY (Mathematics)	2	2	3	3	2½
FIARAHAMA-MONINA (civic education)	6	6	2	2	2½
FAMOKARANA (economics/ production)	4	5	7	6	5
FAHALALANA-TSOTSOTRA (elementary science)	7	7	6	7	6
ZAVAKANTO (fine arts)	3	4	5.	4	4

Note: Most difficult subject = 1; second most difficult subject = 2; third most difficult subject = 3; etc. up to 7.

79. Thorough familiarity with the teaching conditions in primary schools will be needed to interpret these findings correctly. Are subjects "difficult", do they "pose problems", because teachers were ill-trained to teach them? Or because corresponding textbooks are not available? Or because they are intrinsically too complex for children of a given age? It would seem useful to pursue these questions in more detail, and to draw the necessary conclusions.
80. However, even at face value, it is worth noting that French is clearly considered the most difficult subject at all grades except T1 (when only a few urban schools are likely to teach it). Civic education, for reasons one would need to explore further, suddenly becomes the second most difficult subject as from T3. Mathematics, too, poses problems to students at any grade. As regards elementary science as well as economics/production, it is somewhat surprising that the school principals interviewed should consider these to be "easy" subjects.

## G. Conclusions

The present sample survey covers about 8 percent of total enrolments in the 5-year cycle of basic education in Madagascar. Caution should, nevertheless, be exercised in generalizing its findings.

Rates of repetition and drop-out are high throughout the five grades. T1 and T5 are, however, particularly critical. Girl students are, on the whole, less affected than boys.

The Global Wastage Ratio varies considerably between Faritany and Circumscriptions. It is 3.3 in Tananarive and 7.2 in Tamatave, compared with the ideal value of 1.0. In Fenerive-Est and Mahajanga II educational wastage has reached very serious proportions.

Town schools have levels of educational wastage less than half as high as for their rural counterparts. The sample highlights the existence of some 20% incomplete schools not offering the required number of grades. In addition, there are some 40% of single classroom schools which offer the full 5 grades in very congested conditions.

This study has examined numerous factors, both in the schools themselves and in their environment, for their possible influence on levels of educational wastage. Some of these factors are found to be significantly correlated with GWR and TRR - the indicators used in this study to measure educational wastage. It needs to be borne in mind, however, that statistical correlations are not necessarily the same as causal relationships.

With this caveat, the study suggests the following conclusions:

- Smaller schools, and schools of recent origin, should be the first beneficiaries of policy measures to remedy educational wastage; they are the ones most badly affected;
- Neither the student/teacher ratio nor teachers' formal qualifications present a particularly urgent problem; rather, it would seem that years of teaching experience, and the time spent in one and the same school, enable teachers to fight repetition and drop-out with some success;
- The in-service training in the F4s, though time-consuming, has no perceptible positive influence on the wastage problem,
- Special support teaching of students who had to repeat is very uncommon and needs to be encouraged,
- Textbooks and didactic materials are very scarce in the E.E.B.s. While correlation analysis shows no significant influence on educational wastage, teachers and parents are agreed that shortage of textbooks is a prime factor which obliges students to repeat.
- Where school buildings are in good condition, and electricity is available, levels of educational wastage tend to be